Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

CLIMATE AND BOUNDARIES OF VIRGINIA.

BY

G. T. SURFACE.

CLIMATE.

In speaking of the climate of any region we naturally think of the weather conditions which prevail during the different seasons. Temperature, pressure, humidity, absorption, radiation, winds, and currents are the determinant factors, all of which interact with infinite variations. Just as the chemist and physicist are unable to dissect and measure the smaller units of physical substances, so the climatologist is unable to measure the smaller units of climatic cause and control. We can, however, determine the larger units, and out of these construct logical groupings. These, when studied in relation to each other at regular intervals through a long period, indicate with a fair degree of accuracy what may be considered as *constants* and *variables.* It is thus that we arrive at the science of *climatology.* It is only within modern times that it has advanced to the stage of becoming really an economic science, which we are conservative in saying is but in its infancy.

The native wealth of any land area is determined largely by its climatic and geological environment. We are justified in affirming that Virginia holds an exceptionally favored position as to the harmony of these two wealth-determining factors, so that nothing is lacking, from the standpoint of natural essentials, for the largest and most economic development of its resources.

The effect of climatic influences on the social order is also not to be lost sight of, or underestimated. The leading psychologists and anthropologists attribute the wide differentiation of races to differences of geographic environment. Many of these designate climate as the controlling factor. Whether this may, or may not be true, we do know that climatic extremes do not conduce to the most efficient voluntary activity.

The climatic belts of the State are in general coincident with the physical divisions. There are limited areas, which, by virtue of their position, are subject to more sudden changes and greater extremes.

There are no high mountain ranges in the State, but the elevation is continuous from the Eastern Shore to the Blue Ridge. We see in Table I (p. 97) a difference of 10° in the mean annual temperature of Norfolk and Burke's Garden, the latter being an observation station in Tazewell County. This difference would be even greater but for the tempering effect of the warm waters of the Gulf of Mexico on the prevailing southwestern winds. The rainfall varies somewhat with the seasons, but the general average for different years shows that no section can be said to be favoured above another. This average ranges between 35 and 45 inches. The rainfall of the Tidewater region would be considerably heavier than in the Blue Ridge, the Valley, and the Appalachia regions but for the re-saturation of the southwestern winds as they pass over the warm Gulf waters. Killing droughts and disastrous weather changes, such as are common to the region west of the Mississippi River, are unknown. In Texas we find a maximum difference in the mean annual temperature of 21.7°, and droughts are not infrequent in the northern and western portions of the State. Washington shows the widest range in the annual rainfall, Clearwater having an average of 126 inches and Mottinger Ranch an average of 11 inches.

The Alleghany Highlands, extending for a distance of 200 to 500 miles west of the State boundary, constitute an effectual barrier against the storms which originate in the Mississippi Valley region.

The mean average annual temperature for the whole State is about 56°.

Tidewater.—The climate of this coastal region has a mean annual temperature of 58° to 61°, being greatly ameliorated by the warm north-west currents of the Atlantic, whose waters intermingle off the Florida coast with the heated waters of the Gulf Stream as they emerge from the Gulf of Mexico, and flow thereafter as a north-east current along the eastern coast of the United States. The soil of this belt is universally sandy or a sandy loam and, with a limited rainfall, or cold climate, would be of little economic value. Having an adequate rainfall and a warm-temperate climate, it becomes ideally adapted to the profitable industry of trucking, and holds first rank in this line of production. Much of the arid land of the west has a similar soil, and as favourable temperature requirements, but is practically worthless for lack of rain supply or irrigating facilities.

The average growing season* is from 7 to 7½ months' duration. The winters are short and mild; the snowfall usually light; and the freezing never extreme or protracted. The summer's heat is so tempered by the sea-breezes as to seldom become oppressive.

Malaria was common during the early Colonial days, but this has been largely exterminated by clearing the forests, draining the lowlands and swamps, and the removal of the residences to more sanitary locations.

---

* Average duration from the last killing frost in the spring to the first killing frost of autumn.

The mean annual temperature of the extreme southern Tidewater Counties averages about 60°. It is in this belt that cotton is grown to a limited extent. The mean annual temperature decreases gradually within narrow limits as we pass northward. This results both from the more inland geographic position, and the difference in latitude. The heaviest rainfall registered in Tidewater is in the Richmond, Williamsburg, Pamunkey and Gloucester Peninsulas, this belt being northwest of the Chesapeake Bay mouth. Even in the Virginia coast region there is considerable seasonal variation in the amount of precipitation.

Middle-Piedmont.—The average mean annual temperature of this belt is 56°-58°. Lynchburg is near the Middle-Piedmont boundary line, and Manassas is on the line. In 1900, the average for Lynchburg was 58.4°, and for Manassas 56.5° (in 1902 the average for Lynchburg was 56.8°, and for Manassas 54.1°). This climatic belt marks the area of the most successful tobacco culture. Tobacco is also cultivated with fair success in the mountain areas, with a mean annual temperature as low as 52 degrees.

The growing season of the Piedmont belt is 2 to 3 weeks shorter than in Tidewater.

There is greater variation in the prevailing direction of winds in this belt than exists in any other part of the State, because of its inland location with reference to both the mountains and the sea. The autumn winds are prevailingly northwest, but those of the other seasons fluctuate, the east and north east being most common in the spring and summer. The northwest autumn winds are usually displaced by western winds in the early winter, which in turn give way to southwest winds before March.

Blue Ridge, Valley and Appalachia.—These regions constitute the mountain district of the State, in which the climatic differences so far as revealed by observation do not justify a differentiation. The mean annual temperature of the Blue Ridge and the Valley is 52°-56°, and that of Appalachia is 48°-54°. We may correctly designate this as the zone of grasses, grains, and apples. The average mean annual temperature not only increases as we pass from east to west, but also from north to south, since the elevation gradually increases from the Potomac River southward.

The aggregate precipitation of the mountain district does not differ materially from the Piedmont-Middle belt, but the proportion represented by snow is much greater; and the rains are more frequent and of shorter duration. The rainfall also increases with the altitude up to a variable limit, which is fixed by the local conditions. The mountains not only cause the condensation of the vapour brought by the rain-bearing winds, but prevent this supply of moisture from being carried away again by the winds in dry, clear weather. The rainfall of the Valley is greatest along the base of the mountains, since the air, approaching the mountain, is forced to rise some distance from the barrier. Most of the rain is supplied by the southeast and southwest winds, the one directly off the warm Atlantic and the other less directly off the warmer Gulf. Those from the Gulf have been robbed of some of their moisture by the intervening land areas, but the increased elevation enables them to draw more effectively from the decreased supply. Equalization of distribution is established by the eastern half of the State having the advantage of ocean proximity, and the western half the greater elevation.

The duration of the growing season is 5½ to 6 months in the Blue Ridge and Valley, and an average of 2 weeks less in the Appalachia country.

This region, together with the part of Piedmont adjacent to the Blue Ridge, is peculiarly adapted to apple culture. The most successful growers plant their orchards on the mountains, because the valleys are not only more subject to frost, but the winter temperature is lower than for the mountain, up to a greater elevation than is represented by the mountains of Virginia. It is for this same reason that the coffee plantations of Brazil are laid out on the high ground. This theory when first advocated was considered absurd. It is now no longer accepted as a theory but as a fact, having been demonstrated by the scientists of America and Europe. The explanatory cause is, the greater radiation in the valley. This is not necessarily more rapid, but of longer duration. It begins one to two hours earlier in the evening, and continues one to two hours later in the morning. The following we quote from Julius Hann:*

> The Swiss have learned by experience that the mountain sides have far more favourable temperature conditions in late autumn and in winter than the lowlands. During one of the calm, clear spells of late autumn the traveller who spends a few days at one of these farm houses on the steep mountain side may there breathe air which has the mildness of summer; he may see the green fields still decked with autumn flowers . . . while down below, in the valley, the ground is already frozen hard by the frost, the trees are lifeless, and all the activities of plant life have long ceased.

There is a wide variation in the snowfall of the State, both region ally and seasonally. It is usually light and of short duration in Tidewater and Middle Virginia. From the Blue Ridge westward, however, it is not uncommon for the ground to be blanketed a period of six weeks or two months. This is of great economic value to the grain and grass crops of the region, protecting them not only against the intense cold of January and February, but ameliorating the effect of the thaws of occasional warm days. Since the region under discussion includes most of the large forested areas of the State it is important that we make a brief study of the climatic effects of forests. Forests increase the absorption, and protect the contained moisture from speedy evaporation. This is most in evidence during a drought. When the fields are parched and dusty, scarcely showing signs of life, the adjacent forest has a wealth of foliage and flower. Throughout the areas that have been deforested during the last half century there is a noticeable decrease in the size of the streams. The ruins of old mills still remain on streams whose volume would now be entirely inadequate. The influence of forests on the distribution of water supply is greatest in connection with the snows and rains of the winter season. By preventing the snows from drifting and decreasing the melting, a forested area thereby holds the water until it can be assimilated by percolation and absorption. We do not insist that the aggregate rainfall has been materially lessened, but that the same rainfall in a deforested region cannot be so thoroughly assimilated. If the country is deforested the ground usually freezes several inches before it receives much snowfall, and, in consequence, remains frozen to a greater or less extent until the approach of spring. The frozen earth being almost impervious, causes the loss of most of the water by surface drainage. The natural result is that floods are far more frequent in deforested regions.

---

* Handbook of Climatology (Ward's translation), p. 264.

Forest soils have also that constituency and protection which appreciably decreases radiation. The old settlers recognized them as "warm soils," without having the knowledge of a scientific explanation. The inability to raise peaches in certain parts of Michigan with former success has been ascribed by some students of the question to the deforestation of the country.

General Remarks.

The climate of Virginia is ideally adapted to successful agriculture, since the prevailing conditions in the different geographic divisions are such as are best suited to the soils of those regions. If the Blue Ridge and Tidewater could exchange positions, Virginia would cease to supply the eastern markets with early vegetables, and, instead of an annual surplus of more than $10,000,000, would be but little more than self-supporting. Then, if Appalachia could exchange places with Piedmont, Virginia would cease to be an important tobacco-producing State, and the net receipts from this resource alone would be decreased by at least $5,000,000 per year. The rainfall has the most advantageous monthly distribution with reference to farming operations and the growth of crops, being somewhat heavier from April to July, which makes disastrous droughts unknown. The growing season of each section is always long enough to mature the standard crops of that section.

In general healthfulness, probably no State in the Union is more favored. The coastal region is growing in importance as a winter resort, and the western part of the State has for many years been a Mecca for summer tourists who seek health and comfort. The popular resorts are to be found in almost every county west of the Blue Ridge.

MEAN ANNUAL TEMPERATURE, RAINFALL AND SNOWFALL, AND LENGTH OF GROWING SEASON,

1900–1905.

FOR REPRESENTATIVE VIRGINIA STATIONS.

						ANNUAL			KILLING FROST		ANNUAL	
STATION.	NAT. DIV.*	JAN.	APR.	JUL.	OCT.	MEAN.	EXTREME MAX.	EXTREME MIN.	LAST IN SPRING.	FIRST IN AUTUMN.	RAINFL. INCHES.	SNOWFL. INCHES.
TABLE I, 1900:												
Norfolk	T	42.	45.5	80.9	65.8	60.7	100	13	Mch. 22	Nov. 10	39.34	7.3
Richmond.......	P–T	39.4	57.3	81.2	64.6	59.7	102	10	Apr. 5	Nov. 10	37.76	15.1
Farmville	P		57.6	80.6	64.4		105		Apr. 14	Nov. 6		9.
Lynchburg......	P	37.6	57.1	78.6	63.3	58.4	100	9	Mch. 22	Nov. 10	47.10	7.2
Staunton	V	37.4	54.3	77.1	61.	56.9	102	2	May 10	Nov. 9	39.02	
Clifton Forge...	A	31.8	50.5	74.6	63.	55.1	100	6	Apr. 15	Nov. 6	37.91	
Blacksburg	V	35.7	51.2	71.4	57.3	52.9	96	–2	May 10	Oct. 18	43.75	20.5
Manassas	P	35.0	53.6	78.8	60.7	56.5	99	2	Apr. 15	Nov. 9	31.07	4.5
Burkes Garden..	A	31.3	48.9	67.9	54.0	50.1	89	-6	May 5	Oct. 10	41.85	38.0
Bigstone........	A	35.2	55.2	75.2	63.4	56.3	95	–4	May 11	Nov. 5	48.9	20.5
TABLE II, 1901:												
Norfolk	T	41.2	52.0	81.0	61.0	58.5	100	16	Mch. 8	Nov. 11	42.61	11.5
Richmond......	P–T	38.8	52.8	81.0	59.1	59.2	99	9	Mch. 17	Nov. 6	42.05	15.8
Farmville.......	P	39.0	53.6	82.2	57.4				Mcb. 30	Oct. 26		11.0
Lynchburg......	P	38.3	51.9	80.0	57.0	55.7	97	8	Mch. 18	Oct. 26	54.81	10.3
Staunton........	V	37.6	50.0	78.2	56.8	54.1	96	1	Apr. 12	Oct. 30	51.18	
Charlotteville...	P	37.8	51.8	79.0	59.4	55.4	97	7	Mch. 12	Oct. 12	65.29	15.5
Blacksburg.....	V	33.0	45.2	74.0	52.0	50.0	92	0	Apr. 12	Oct. 4	53.46	20.3
Wytheville......	V	35.1	47.0	75.4	54.7	52.2	95	0	Apr. 12	Oct. 8	62.65	
Burkes Garden..	A	31.8	42.4	70.4	48.4	47.6	88	–14	Apr. 29	Sept. 21	63.71	
Bigstone Gap...	A	35.4	49.0	76.5	54.9	53.3	95	–5	Apr. 24	Oct. 4	55.77	28.8
TABLE III, 1902:												
Norfolk........	T	37.4	56.0	79.6	64.2	59.3	98	18	Mch. 19	Dec. 6	38.4	0.1
Richmond......	P–T	36.2	55.8	79.0	61.6	58.2	98	15	Mch. 7	Oct. 30	49.32	2.2
Farmville.......	P	33.6	54.8	80.7	59.6		101	4	Mch. 21	Oct. 22		
Lynchburg.....	P	34.2	54.8	78.5	59.0	56.8	99	13		Oct. 30	48.79	2.1
Staunton........	V	33.8	52.4	76.3	58.4	54.9	99	9	Apr. 16	Oct. 15	38.19	
Clifton Forge...	A	28.0	47.7						Apr. 20			
Blacksburg	V	30.5	49.0	72.5	55.1	52.4	95	5	Apr. 18	Sept. 14	33.73	6.
Manassas.......	P	33.5	50.0	77.0	58.6	54.1	103	0	Apr. 20	Oct. 22	36.85	
Burkes Garden..	A	29.0	44.7	67.6	50.7	48.5	87	0	Apr, 18	Sept. 14	43.95	11.0
Bigstone Gap...	A	33.4	52.2	74.2	57.6	55.1	94	6	Apr. 13	Oct. 15	48.06	

* Tidewater (T), Piedmont (P), Valley (V), and Appalachia (A).

MEAN ANNUAL TEMPERATURE, ETC.—*Continued.*

						ANNUAL			KILLING FROST		ANNUAL	
STATION.	NAT. DIV.*	JAN.	APR.	JUL.	OCT.	MEAN.	EXTREME MAX.	EXTREME MIN.	LAST IN SPRING.	FIRST IN AUTUMN.	RAINFL. INCHES.	SNOWFL. INCHES.
TABLE IV, 1903:												
Norfolk	T	41.2	58.0	78.7	60.6	59.0	97	14	Apr. 5	Oct. 28	46.10	15.2
Richmond	P-T	38.2	57.8	79.3	58.9		93	7	Apr. 24		47.42	20.4
Farmville	P	38.2	55.4	78.9	57.8		99	12	May 3	Oct. 26		
Lynchburg	P	36.6	56.1	77.6	58.0	56.4	96	8	Apr. 5	Oct. 27	41.24	14.6
Staunton	V	34.6	54.5	74.2	57.1	54.4	95	-5	May 2	Oct. 25	45.63	
Rocky Mount	P	33.4	52.6	71.2	53.2		89	7	Apr. 6	Oct. 27	49.61	
Blacksburg	V	32.5	50.5	71.8	53.2	51.2	91	-1	May 2	Sept. 29	44.76	20.0
Burkes Garden	A	29.7	47.2	66.8	48.8	48.1	86	-6	May 5	Sept. 19	46.22	28.0
Manassas	P	33.0	53.1	75.8	56.6		96	2	Apr. 6	Oct. 27		
Williamsburg	T	35.8	56.2	78.0	57.8	56.9	98	9	Mch. 4	Oct. 27	49.24	
Bigstone Gap	A	39.0	54.3	74.0	55.2	55.1	94	-3	Apr. 24	Oct. 19	46.8	20.9
TABLE V, 1904:												
Norfolk	T	36.4	55.4	77.2	59.6	57.4	94	12	Mch. 29	Nov. 7	42.6	12.2
Richmond	P-T	33.4	54.2	77.7	57.7	56.2	98	9	Apr. 20	Oct. 28	37.84	19.0
Farmville	P		52.8	78.0			98		Apr. 21			
Lynchburg	P	32.8	52.2	75.6	56.2	54.8	98	3	Apr. 22	Oct. 4	26.87	19.2
Staunton	V	30.3	50.0	72.5	55.7	52.9	95	-4	Apr. 22	Oct. 7	28.84	
Wythville	V	28.8	46.5	69.4	51.8	50.7	89	1	Apr. 22	Oct. 15	24.38	19.9
Blacksburg	V	29.	46.6	69.4	52.4	50.3	91	-3	May 16	Oct. 15	32.25	26.0
Charlottesville	P	31.8	52.8	75.1	58.6	55.3	90	4	Apr. 22	Oct. 7	30.37	21.0
Burkes Garden	A	26.2	44.1	64.4			85	-14	May 11	Sept. 16	39.59	29.0
Bigstone Gap	A	32.5	51.1	71.8	55.3	54.3	92	5	May 17	Oct. 24	39.06	30.2

* Tidewater (T), Piedmont (P), Valley (V), and Appalachia (A).

GEOGRAPHIC AND POLITICAL BOUNDARIES.

Five natural geographic divisions can be easily recognized in a study of the physical features and climatic belts of the State. These have a general northeast and southwest direction, as fixed by the Atlantic coast-line on the east, and the Appalachian System on the west.

NATURAL DIVISIONS.

		AREA IN SQUARE MILES.
1.	Tidewater	11,000
2.	Middle	12,000
3.	Piedmont	6,000
4.	Blue Ridge	2,500
5.	Valley	5,000
6.	Appalachia	5,400

These divisions succeed each other in parallel order, and are characterized by a continuous increase of elevation from the sea westward.

Tidewater.—As the name would indicate, this represents that portion of Virginia territory which constitutes a part of the Coastal

Plain. It is an irregular quadrilateral in shape, averaging 114 miles in length from north to south, and 90 miles in width from east to west, and includes an area of about 11,000 square miles. On the south it borders North Carolina for a distance of 104 miles; on the east it is bounded by 1,500 miles of tidal shore-line on the Atlantic Ocean, Chesapeake Bay, and the Lower Potomac River, or one mile of shore to every 71 1/3 square miles of territory. The continent of Europe has one mile of shore-line to every 191 square miles. The western boundary is marked by that line of sudden topographic change known as the *fall line,* where the streams emerge from the hard crystalline rocks of Piedmont on to the soft sedimentary deposits of the Coastal Plain. The great number of bays and estuaries are of comparatively recent origin, having been formed by the gradual subsidence of the Coastal Plain region.

The political boundary lines of Virginia are generally irregular, but they are more irregular in Tidewater than elsewhere, since the boundaries of the older counties were almost without exception fixed by the streams and the Chesapeake Bay water front.

Middle Virginia.—In the article on physiography this territory was grouped as a part of Piedmont because of the similarity of structure and the inability to so clearly differentiate it physiographically from the Piedmont proper. However, in the early development of the country the barriers which constitute its irregular western border were sufficient to give rise to a fairly well-defined differentiation of population. It is for this reason that we describe it here as a geographic division.

It extends westward from the head of tide ("fall line") to the foot of the low, broken ranges, Catoctin, Bull Run, Yew, Clark's, South-west, Carter's, Green, Findlay's, Buffalo, Chandler's, Smith's, etc., mountains and hills. These extend across the State in a south-west direction from the Potomac River, near the corner of Fairfax County, to the North Carolina line, and are a part of the eastern outliers of the Appalachian System. The general form of this area is that of a right-angled triangle, its base resting on the North Carolina line; its perpendicular a line 174 miles in length, extending from the North Carolina line to the Potomac River; and the hypothenuse, 216 miles in length, extending along the Piedmont border. Most of the streams cross it at right angles, dividing it into a series of ridges. On the whole, it has the appearance of an undulating plain. A triangular area, including a part of Fauquier, Fairfax, Culpepper, and Madison counties, consists of Triassic-Jurassic sandstone, which produces a residual soil of marked fertility and durability.

Piedmont.—This division extends from the Appalachian outliers, previously named as the irregular western border of Middle Virginia, to the eastern base of the Blue Ridge. It varies in width from 20 to 30 miles, and extends from the banks of the Potomac to the banks of the Dan River on the North Carolina line, a distance of 244 miles. The elevation increases from 300-500 feet on the east, to 700-1200 feet along the Blue Ridge border. The topography is much broken by the numerous streams which cross it almost at right angles.

From the middle of the 17th Century to the middle of the 18th Century this region constituted the Virginia frontier, which gave rise to a very distinct type of society.

Blue Ridge.—This is the most prominent physical feature in the State, and stands as a conspicuous barrier between the Piedmont and Valley regions. It is 3 to 20 miles in width. Its elevation at Harper's Ferry, where the Potomac breaks through the Ridge, is 1,460 feet. This increases southwestward, reaching its maximum in Rogers Mountain, Grayson County, which is 5,719 feet in elevation. In its southern portion it expands into a plateau, which is the watershed for the waters which flow into the Gulf of Mexico and the Atlantic Ocean. This fan-like expansion includes the counties of Floyd, Carroll, Grayson, and parts of Franklin and Montgomery.

The early colonists gave it the name of the "Blue Mountain," or the Blue Ridge, from its appearance in the distance. During the first half century of colonization the inhabitants believed it was impassable; and the first explorers to ascend it did so only to find other heights as formidable in appearance looming up in the west, and turned back in discouragement. In the spring of 1669 John Lederer* made a trip to the top of the Blue Ridge, which he called *Apalataei.* Almost the whole of the plateau is drained by New River, which flows northeast through a gorge valley of circuitous winding, having established its course at a stage of advanced erosion, when the whole Appalachian area was reduced to a peneplain.

The Valley.—This division is 15 to 30 miles in width and 310 miles in length, making an area of about 5,000 square miles. It consists of a continuous chain of counties, the boundary of which is fixed by the Blue Ridge on the one side and the second and third range west of the valley on the other. Prior to 1738 all that part of Virginia situated west of the Blue Ridge was included in the County of Orange, but in the fall of 1738 this territory was divided into the counties of Frederick and Augusta.

---

* Discoveries of John Lederer in Three Marches from Virginia, p. 11.

Appalachia.—This is the most irregular of the natural divisions both in boundary and physical features. The eastern boundary is in general formed by Walker, Brush, and North Mountains; while the western is formed by the Cumberland, Black and Flat Top Mountains south of the New River divide, and by the Alleghany Mountains or the Alleghany Front north of the divide.

This irregular belt is 260 miles in length and 10 to 50 miles in width, with an approximate area of 5,725 square miles.

The counties can be provisionally grouped with reference to their drainage system as follows:

1. *James River Group,* including Highland, Bath, Alleghany and Craig Counties.
2. *Kanawha* or *New River Group,* including Giles and Bland Counties.
3. *Tennessee River Group,* including Tazewell, Russell, Lee and Scott Counties.
4. *Sandy River Group,* including Buchanan and Wise Counties, which topographically belong to the Alleghany Plateau region.

SUMMARY OF STATE BOUNDARIES UNDER DIFFERENT CHARTERS AND NEGOTIATIONS.

1606.—First Charter* under James I, including all territory 100 miles from the coast, between 34°-45° N. Latitude, and all the islands adjacent thereto.

1609.—Second Charter, known as "Virginia Charter of 1609," including 200 miles along the seacoast northward and southward "from the said point of Cape Comfort," "through from sea to sea," and all islands adjacent thereto.

1611-1612.—Third Virginia Charter, including all territory between 30°-41° North Latitude.

1632.—Maryland is detached, but the separation is strenuously opposed by the Virginia colonists.

1744.—Virginia obtained from the Six Nations a deed for all their territory, which had for its boundary on the west and northwest the Mississippi and Illinois Rivers; thence along the east side of Lake Michigan, including Lake Huron; thence to the Ottawa River, which it followed to its junction with the St. Lawrence River; thence to the head of Lake Champlain; thence on the 45th parallel to the St. Lawrence River; thence to Lake Ontario; thence with the Lake shore to the western Pennsylvania boundary." †

---

* Jamestown was settled under this charter.

† Colonial Boundaries of Virginia and Maryland, Gilbert Thompson, pp. 8-9.

From this time the boundaries remained unchanged until the settlement of the national boundaries by the cession of 1783, in which, on October 20, the General Assembly passed an act authorizing the delegates in Congress to convey to the United States all the Territory northwest of the Ohio River*

1862-3.—The territory now constituting the State of West Virginia† was by the vote of the people separated from Virginia It consisted of the three Northwestern Virginia Senatorial Districts.

THE KINGSTON EARTHQUAKE.

On the afternoon of January 14 Kingston, the capital of Jamaica, a city of about 80,000 inhabitants, was practically destroyed by earthquake and fire. The deaths number over 1,000. There were about 10,000 houses in the city and parish of Kingston, of which about 96 per cent. were wholly or partly of brick. Not one hundred of these buildings was in a habitable condition after the calamity. The comparatively few wooden bridges were mostly mere huts and were not badly injured. The first shock came at 3.30 P.M., and continued only about thirty seconds. Fire followed immediately, and in a few hours the destruction was complete. Within the first week after the calamity about fifteen severe shocks occurred. As the cable lines were damaged the news could not be sent to America and England for about a day. Only about a fourth of the population, mostly the very poor, remained in the city, camping on the race-course, in the parks, and in other open spaces.

Kingston was close to the seismic focus. The motion for a little over thirty seconds is described as like that felt on a ship in a choppy sea. The movement was chiefly vertical. Objects are described as jumping from the ground, which, if true, shows how violent was the shock. The rails of the street-car routes were twisted, water-supply pipes were damaged, and the sinking of the shore-line showed that the superficial beds, at any rate, underwent important changes of level.

Port Royal, six miles to the south, shared to a great extent in

---

* American History Leaflet No. 22. By Hart and Channing. p. 12.

† Constitution framed November, 1861–February, 1862, and ratified by the popular vote in April, 1862. Bill for the admission of the state passed the United States Senate July 14, 1862. State formally inaugurated June 20, 1863.

The Rending of Virginia. G. D. Hall. pp. 26–27.